TECHNICAL MANAGEMENT TEAM
MEETING NOTES
December 4, 2002
CORPS OF ENGINEERS NORTHWESTERN DIVISION OFFICES – CUSTOM HOUSE
PORTLAND, OREGON

FACILITATOR'S SUMMARY NOTES ON FUTURE ACTIONS
Facilitator: Donna Silverberg

The following notes are a summary of issues that are intended to point out future actions or issues that may need further discussion at upcoming meetings. These notes are not intended to be the "record" of the meeting, only a reminder for TMT members.

Vernita Bar:
The Vernita Bar protection level for this year is 70 kcfs. 638 redds have been counted. A survey report will be posted on the TMT website.

CRITFC Review of 2002:
Kyle Martin said that revisions are being made to the CRITFC review and will be presented at the Dec. 18th meeting. Kyle distributed a monthly forecast and asked that the BOR and COE minimize drafting at projects until the Jan. 1 forecast is out.

TDG Level Variations: Criteria for Modifications to Spill:
Dick Cassidy, COE, distributed handouts and explained the COE's 14 criteria used to guide spill changes at the Columbia and Snake River projects. He then explained the process for using the criteria: daily, 3-4 individuals evaluate the projects and then together they develop a recommendation for spill modifications. The information used to make decisions can be found on the "spill log" link on the TMT home page. Beginning next year, changes will be logged and posted daily for easier access to real-time data. The COE has been working to make just one spill change per day. The Salmon Managers requested clarification on why, when adjustments are made, spill levels are not raised closer to BiOp. levels sooner. A suggestion was made for TMT to take a "field trip" to observe the spill modification process in mid-May to late June to understand the sensitivity around decision-making. TMT members thanked Dick for the presentation and said that it was very helpful.

ACTION: TMT members will review the information from today's presentation and raise further questions at the next TMT meeting.

IT Guidelines:
The IT Guidelines were approved at the November 7th IT meeting. TMT members are asked to review the IT and TMT guidelines and come prepared to discuss them at the next TMT meeting, December 18th.

Lake Roosevelt Forum Spring Conference:
TMT has been invited to attend the April 21-23 conference in Spokane, and has been requested to hold its meeting on April 23 for conference attendees to observe. Most TMT members agreed that there is added value to meeting in Spokane during the conference. Shane Scott, Washington, will negotiate cost issues with the Director of the Forum.

2003 Water Management Plan Fall/Winter Update:
A few edits were made to the Fall/Winter update. The COE would like to finalize and post the document on the website as soon as possible. Suggestions were made to append comments to the document, include an approximate date for the end of emergence for chum, and include October and November as a light precipitation forecast. A change will be made that the Action Agencies plan to "request to" modify the November 1 start date for chum operations.

ACTION: Paul Wagner will provide alternative language to describe the decision making process used this year for November chum operations. The next (final?) draft of the Fall/Winter update will be circulated on Friday, December 6th.

Chum Flow Alternatives:
Suzanne Cooper gave a follow-up presentation on possible alternatives to hydro measures. BPA modeled two alternatives, using the 2000 BiOp. as the driving force and chum as the priority operation. She requested that TMT review this new information and be prepared to discuss it at the next TMT meeting. The information can also be found on the TMT website.

Question to TMT: What are the biological effects of the alternative operations proposed? What is the preferred or acceptable alternative operation? The COE, NPPC and others have information that may be useful as well.

Review Current System Conditions:
Fish: Oregon, Washington and USFWS reported on fish migration status. Record numbers of chum have been seen. A preliminary count estimated 30,000 to 40,000 chum!

Reservoir Operations/Power/Water Supply: Projects are being operated at minimum outflows. The latest water supply forecast should be available in the next few days. The COE has requested RFC and NRCS to present forecasting information to TMT at the next meeting.

Zero Nighttime Flow at Lower Snake Dams: Scott Bettin, BPA, requested flexibility for zero flow beyond a midnight-6 am time period for the next three months. TMT agreed to extend "nighttime" hours to 6 pm-6 am, during which BPA has the flexibility for zero flow at the Snake River dams.

Libby Ramp Rates: The burbot operation suggests a two-day ramp down rate to 7.3 kcfs, a rate that is quicker than allowed in the USFWS Biological Opinion. Bob Hallock, USFWS, said he recognized the potential for an effect on bull trout, and agreed to the

quicker ramp-down operation this year. USFWS has coordinated with Montana on this issue.

A line problem could potentially call for a decrease in Libby generation. Attempts will be made to wait until after flows are down to fix the line problem, but if it cannot be delayed, BPA proposed the operation be done this Saturday. BPA will work with USFWS on this issue.

Next Meeting, December 18:
Agenda Items:

- NRCS/RFC Forecast Presentations
- NPPC Chum Flow Analyses – John Fazio
- Chum Alternative Flows Discussion
- Final WMP Fall/Winter Update
- TMT Guideline Revisions
- CRITFC 2002 Review

*The first 2003 TMT meeting is scheduled for January 8th, three weeks from December 18th.

1. Greeting and Introductions

The December 4 Technical Management Team meeting was chaired by Cindy Henriksen of the Corps and facilitated by Donna Silverberg. The following is a distillation, not a verbatim transcript, of items discussed at the meeting and actions taken. Anyone with questions or comments about these minutes should call Henriksen at 503/808-3945.

2. Vernita Bar.

Scott Bettin reported that this year's Vernita Bar protection level has been set at 70 Kcfs, adding that Rudd Turner has posted the elevations of the 638 fall chinook redds counted during the most recent Vernita Bar survey on the TMT website. That's either a record or a tie for the record for the highest Vernita Bar redd count, said Bettin – there are lots of redds in there this year.

I thought that Grant PUD was hoping to operate to a lower level, Henriksen said. Grant was shooting for 60 Kcfs, but because of the large number of redds, it was necessary to set the protection level at 70 Kcfs, Bettin replied. So if people want to see where those redds are, they should look on the TMT website? Silverberg asked. That's correct, Bettin replied.

3. CRITFC Review of 2002.

Kyle Martin said that CRITFC's review will be presented at the December 18 TMT meeting; it is still being reviewed in-house. As a consolation prize, however, we have the latest CRITFC water supply forecast, Martin said; it looks like we're going to be

below-average precipitation month in December. If there is any flexibility in the flood control operation, Martin said, we would ask that the project operators exercise it, to avoid unnecessarily releasing water early in the season that we will need later.

4. TDG Level Variations: Criteria for Modifications to Spill.

Dick Cassidy led this presentation; he began by distributing a handout summarizing the Corps' spill change guidance for the Snake and Columbia Rivers. Essentially, these are the guidelines we use to direct our day-to-day spill operations, Cassidy said. He spent a few minutes going through the specifics of this document (the full text of which is available via the TMT website – please refer to this document for full details of the Corps' spill change guidance parameters), touching on the following major factors:

1. BiOp guidance, Table 9.6-3 on p. 9-89
2. Oregon variance and Washington rule change (115% forebay, 120% tailwater)
3. Firm generation commitments
4. Project-by-project guidance, 60% DGAS report; project performance graphs
5. Travel time guidance (table provided)
6. Basic adjustment guidance – Snake projects, Columbia projects, SYSTDG guidance for Bonneville Dam
7. Weekend Guidance
8. Monday guidance
9. Holiday guidance
10. Degassing guidance
11. Air temperature guidance
12. Spill passage test schedule influence
13. Maintenance and repairs
14. Physical spillway designs

Again, please refer to Cassidy's handout (linked to on the TMT homepage under "RCC WQP") for full details of each of these guidance factors.

In response to a question from Bettin, with respect to Factor 6, Cassidy said that, currently, the Corps has SYSTDG-generated TDG production nomographs for Bonneville only. However, the Corps is working with Mark Schneider and Mike Schneider to develop nomographs for all of the Lower Columbia projects in time for use in the 2003 spill season.

When the Water Quality Team first asked us to list the factors we use to set daily spill levels at the Corps projects, it was surprising how long the list became, Cassidy said. With respect to the process for using these factors, he said, it would be easy for a person looking at this list on a daily basis to overlook a factor or interpret one or more of them incorrectly. For that reason, the Corps has a three-person team that looks at these factors daily and develops a recommendation as to whether spill at each project should be increased, decreased or stay unchanged.

The most difficult hurdle is the environmental factors, Cassidy said – sometimes the forecasts are right on, but more often they are off by some degree one way or another. Sometimes we just make mistakes, he said. However, I didn't want you to think it was just a single person at each project making these daily decisions – it is a composite recommendation, Cassidy said. He illustrated the challenges inherent in setting the daily spill operation by using an analogy from his days in the high school cafeteria, in which he and his friends would try to shove a quarter as close to the edge of the table as possible without it falling off.

We generally try to make only one change to the spill operation at each project per day, Cassidy added. We do our analyses in the morning, wait until after 1 p.m. internal meetings to get the latest information, then send out the instruction for the next day's operation about 2 p.m., Cassidy said. Paul Wagner and Ron Boyce requested that the Corps add a daily log of the RCC's spill change decisions to the TMT homepage in 2003. Details about the drivers and constraints behind each day's decision would be very helpful, particularly in cases where a given project is below the BiOp spill level for several consecutive days, Boyce said. It should be possible to at least list the factors – Factor 7, Factor 3 etc. – driving each day's decision, Bettin said. Cassidy added that Scott Boyd has developed a graphic representation of the daily spill change information that might be also helpful.

Henriksen noted that, as the TMT has just seen, there are 14 factors the Corps looks at in each day's decision; in addition, we're dealing with variable weather and streamflow forecast information and different characteristics at each project. In other words, she said, it is an extremely complex decision-making process. Bear in mind, as well, that the state waiver levels are an upper limit – it isn't some fuzzy average or approximation, we are expected to stay within that upper TDG boundary, she said.

My concern is that it seems as though we are very quick to make the adjustments to get below the waiver limits, but slower in making adjustments to bring the projects back up to the waiver limits, so that we get the full BiOp spill program, Boyce said. We don't want you to exceed the waiver limits, but we are concerned that you're not making those upward adjustments to get us as close as possible to the waiver limits in a timely fashion, he said. Boyce cited the example of the June 11-24 spill operation at The Dalles, in which spill levels were significantly below both the 40% spill level and the relevant 115% standard in the Bonneville forebay during one of the most critical periods of the juvenile migration. So you want to keep the spill levels as close to the BiOp level as possible, without exceeding them? Silverberg asked. Correct, Boyce replied.

The group discussed the June 15 operation; Henriksen noted that this was a Saturday, a day on which total river flow was expected to recede. Instead, she said, it increased from 268 Kcfs at The Dalles to 287 Kcfs, on a day when we had set spill at 80 Kcfs, down from 86 Kcfs the day before. In other words, Henriksen said, we expected river flow to go down; instead, it went up, and as a result TDG levels went down. Silverberg suggested that a field trip to see exactly how this process works might be beneficial to the TMT's understanding of this issue; it was so agreed. Henriksen said that any time between mid-May and late June would be a good time for this field trip. The field trip will involve having TMT members come to the Corps and see the spill decisions

being made, participate in the daily activities, and gain a better understanding of the variables that are included in this complex daily decision. So we will explore this topic further, and discuss it again at a future TMT meeting, Boyce said. Wagner thanked the Corps for a very informative presentation.

5. IT Guidelines.

Silverberg said that, at the November 7 IT meeting, these guidelines were approved. That's the first time we've had an official, approved set of IT guidelines since the Regional Forum was created in 1995, she said; we thought it would be useful for you to review these, particularly because of Section VIII c. This section says that "All bodies of the Regional Forum will operate under the same rules of procedure, except that technical teams may propose special rules to address unique circumstances. The IT will review and approve any special rules of the technical teams." The TMT does have its own set of guidelines (available under the Water Management Plan section of the TMT homepage), Silverberg said; my question is, do we need to set aside a portion of an upcoming meeting, before the 2003 in-season management period, to review and update the TMT guidelines? After a brief discussion, it was agreed that this might be beneficial. We'll check in on this again at the next meeting, at which point everyone will have had an opportunity to review both the Regional Forum and TMT Guidelines, Silverberg said.

6. Invitation to Lake Roosevelt Forum Spring Conference, April 2003.

Shane Scott said the Lake Roosevelt Forum, a group involved in economic development in the Lake Roosevelt area, has asked the TMT to meet at Lake Roosevelt next April, in conjunction with the Forum's April 21-23 conference. Basically, said Scott, the Forum would simply like us to expose ourselves to those who live and work around Lake Roosevelt, and the issues they face. Silverberg noted that, according to the October 21 letter from Andy Dunau to Scott, the only requirement is that all TMT participants would be required to attend either two or three days of the conference, at a cost of $120-$150. That may be negotiable, however, she said.

Boyce noted that ODFW is under a severe travel constraint, currently; it is unlikely that he will be unable to attend, but that he will participate via phone. After a few minutes of discussion, the TMT agreed that there would be value in attending the Lake Roosevelt Forum's April conference. Scott said he will ask Dunau about the conference registration requirement; Bettin said he will check to see what sort of travel assistance BPA might be able to provide to TMT participants with travel budget restrictions.

7. 2003 Water Management Plan – Fall/Winter Update.

Boyd said this document is now close to final; however, the Corps has made a few edits that others at TMT have not yet seen. We'll get the revised draft posted to the TMT website as soon as possible, he said. Boyd asked that anyone with serious issues with the draft convey those to him asap, because the deadline for finalizing this document is very close. Boyce said he has some problems with the wording of the chum section of the fall/winter update, in particular, whether the TMT recommended the stepwise

operation that was implemented, or whether that decision was made by the action agencies and handed down to the TMT. Oregon would like to see the action agencies stick with the BiOp language here, Boyce said.

Various TMT participants weighed in on this issue, offering a few clarifying comments, questions and suggested wordings. Wagner said he will send appropriately-worded chum language to Boyd for insertion into the draft fall/winter update; it was so agreed. Boyd added that he will post all written comments received along with the draft update. And won't the chum operation be addressed in the NMFS findings letter for 2002? Tony Norris asked. Yes, Wagner replied. Suzanne Cooper added that this issue will be addressed more specifically in the 2004 Water Management Plan and the 2004-2008 Implementation Plan; bear in mind that this is only an update, she said. David Wills observed that, once the NMFS chum recovery plan is issued, many of these questions will also be clarified.

Boyce added that according to the spring/summer update, the action agencies do not plan to provide any spill in support of the 2003 Spring Creek Hatchery release; however, that issue is currently under discussion among the U.S. v. Oregon parties, Bonneville, the Fish and Wildlife Service and others. We're working on it, said Bettin. And we will look for this item once again on the December 18 TMT agenda, Silverberg said.

Henriksen added that, between now and the next TMT meeting, any additional comments on the fall/winter update need to be submitted as soon as possible (today), so that the revised update can be posted to the website as final. If there needs to be any additional discussion of the fall/winter update at the December 18 TMT meeting, Silverberg said, it will be on the agenda.

8. Chum Flow Alternatives.

Cooper reminded the TMT that, she had presented information about the hydro alternatives the action agencies have been working on with NMFS and USFWS at a previous TMT meeting. We asked the Regional Forum groups to provide input on a variety of structural and operational alternatives, one of which had to do with chum, she said; that's what I wanted to talk about today

BPA modeled two alternatives – the base case or BiOp operation (27C), and a chum priority operation (52), Cooper said. She spent a few minutes explaining what these model runs show. Under the chum priority alternative, we were trying to attain a 95% confidence of refilling the projects by June 30, as well as a 125 Kcfs Bonneville minimum, Cooper explained. Flood control, of course, is an overriding driver (meeting the April 10 upper rule curve elevations). The bottom line is that there are about six more years under the chum priority operation in which we would not meet a minimum flow of 125 Kcfs in January, Cooper said. Also, in general, we would be drafting the projects deeper than normal under the chum priority operation, which will have an impact on the volumes available for spring flow augmentation. Cooper asked the other TMT participants to weigh the potential biological impacts of the chum priority operation outside of today's meeting.

Henriksen said the Corps has also done some modeling of the chum priority operation, noting that there are a number of years in the historic record when it would not be possible to meet the 125 Kcfs minimum Bonneville flow, given this set of operational priorities. The takeaway message is simple, she said: in low-water years, there is a good possibility that decisions will have to be made, in terms of the priorities under which we operate the system. If there are some additional model runs you would like us to do, we would be happy to do so, Henriksen said. And we'll have some additional conversation about chum flow alternatives at our December 18 meeting, Silverberg said.

Wagner noted that CRITFC has requested that other parties' analysis of chum flow alternatives be added into the TMT mix, in particular, John Fazio's analysis. It was agreed to discuss these additional analyses at the TMT's December 18 meeting as well. Again, said Cooper, if there are any additional pieces anyone needs in order to provide their input, please let me know as soon as possible.

9. Current System Conditions.

With respect to the status of the chum migration, Boyce distributed a handout summarizing the most recent (Tuesday) mainstem spawning ground survey information. There are still large numbers of chum spawning, he said, while chinook numbers have begun to decline somewhat – 783 live chum and 421 chum redds. The count of 1,043 live chum on November 26 was the largest single-day count recorded in the five years of study surveys below Bonneville. With respect to Hamilton Springs, the most recent count was 300+ live chum, said Wills; at the confluence of Hardy Creek and the channel leading to the springs, there were an additional 100 adult chum observed during our most recent field survey. Counts in those areas are expected to peak this week, he added.

Shane Scott said WDFW staff has been surveying tributaries and mainstem habitat below the Ives Island complex; we've been seeing chum in several new drainages where there is no record of chum since the 1940s. The population has peaked at 15,000-20,000 in the Greys River, and is now on the decline. A very preliminary estimate is 30,000 chum in the total run, Scott said – three times the 2001 count.

Moving on, Henriksen said there isn't much to say regarding reservoir operations. Dworshak continues to release minimum outflow and is currently at elevation 1516 feet. Libby is releasing 24 Kcfs with the goal of reaching its end-of-December flood control point of 2411 feet. Norris reported that Hungry Horse is currently at elevation 3525; Grand Coulee, at elevation 1283. With respect to the most recent water supply information, Henriksen said the fall and winter water supply forecasts are available via the TMT homepage for Dworshak (76% of average, currently) and Libby (81% of average). I have asked the RFC and the NRCS to attend the next TMT meeting to provide their perspective on water supply and snowpack forecasts, she added.

Have you heard when Idaho Power plans to resume normal load following operations, rather than a flat, steady flow for fall chinook spawning? Steve Pettit asked. If there is water, and Brownlee Reservoir is full, we generally expect them to resume load

following in mid-December, Henriksen replied. However, Brownlee is currently 20 feet from full, she said.

Moving on, Bettin said he had sent out a letter regarding zero nighttime flow at the Lower Snake dams; we would like to reserve the flexibility to have that occur at any hour of the day or night, if it becomes necessary, recognizing that the possibility that we would have to use it is remote, Bettin said. Henriksen said the current instruction to the dams says the projects can use zero nighttime flow only from midnight to 6 a.m.; we need some clarification about what peoples' expectation is, so that there are no surprises, she said. Any concerns about going to around-the-clock zero flow if needed? Bettin asked.

What are some of the factors that might result in zero nighttime flow during the day? Boyce asked. If we had a full powerhouse outage and decided to pond the water rather than spill it, for example, Bettin replied. It will most likely occur at night, but we would prefer to have the flexibility to do this at any hour without convening a conference call; frankly, he said, the reason we're making this request is to help Bonneville maximize the value of the water available this year. After a brief discussion, the TMT recommended that such zero-flow period occur only at night. We would, however, be supportive of expanding the nighttime hours under which a zero-flow operation could occur, said Boyce – say, 6 p.m. to 6 a.m. It was so agreed. And this is for the winter period only, through the end of February? Boyce asked. Correct, Bettin replied. It was agreed to re-evaluate this operation at a February meeting.

The final topic under this agenda item was Libby ramp rates; Henriksen said the issue is ramp rates as Libby nears elevation 2411 at the end of December. The proposal, currently, is to ramp down from full powerhouse capacity over two days, somewhat faster than the rate specified in the BiOp, she said – is that a concern, from a bull trout perspective?

Bob Hallock replied that, from the Fish and Wildlife Service's perspective, the impacts to bull trout would be acceptable, because the steeper ramp-down will provide three additional days of 7.3 Kcfs Kootenai River flows to assist the burbot migration, with the understanding that this is for this year only. Bettin noted that a line outage repair problem may impact Libby outflow later this month; he said he hopes to achieve that repair either this Saturday, or delay it until after the burbot operation concludes. In other words, Bettin said, it may be a problem and it may not – we don't have enough information, at this point, to say for sure. We're more concerned about what happens when we're below 10 Kcfs than what happens above 10 Kcfs, Hallock said – we certainly wouldn't like to see any zeros out of Libby. We'll talk to Bob directly if the necessity arises, Bettin said.

10. New System Operational Requests.

No new SORs were submitted at today's meeting.

11. Recommended Operations.

Recommended operations were summarized during a previous agenda item.

12. Next TMT Meeting Date.

The next face-to-face TMT meeting was set for Wednesday, December 18. Meeting summary prepared by Jeff Kuechle, BPA contractor.

TMT ATTENDANCE LIST

DECEMBER 4, 2002

Name	**Affiliation**
Scott Bettin	BPA
Ron Boyce	ODFW
Paul Wagner	NMFS
David Wills	USFWS
Shane Scott	WDFW
Cindy Henriksen	COE
Tony Norris	Reclamation
Dick Cassidy	COE
Patti Etzel	COE
Greg Bowers	COE
David Benner	FPC
Russ George	WMCI
Mike O'Bryant	Columbia Basin Bulletin
Tim Heizenrater	
Scott Boyd	COE
Kyle Martin	CRITFC
Steven Wallace	PacifiCorp
Robin Harkless	Facilitation Team
Jacqueline Abel	Facilitation Team
Chris Ross	NMFS
Rudd Turner	COE
Tina Lundell	COE

Donna Silverberg	Facilitation Team
Suzanne Cooper	BPA
Ian Bird	BPA
Ruth Burris	PGE
Colin Beam	PPM
Laura Hamilton	COE
Steve Pettit	IDFG